ATTORNEY'S DOCKET NUMBER FORM PTO-1390 (PEV 12-20-90) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE 010310-00272-4 TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) U.S. APPLICATION NO. (If known, see 37 CFR 1.5) CONCERNING A FILING UNDER 35 U.S.C. 371 INTERNATIONAL FILING DATE INTERNATIONAL APPLICATION NO. PRIORITY DATE 03 March 1999 PCT/US99/04752 04 March TITLE OF INVENTION IMPROVEMENTS IN HARD-SIDED LUGGAGE APPLICANTIS) FOR DO/EO/US Paolo M.B. Tiramani; John A. Bozak; Soohyun Ham; and Chester Fudge Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information: This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. A copy of the International Application as filed (35 U.S.C. 371(c)(2)) is transmitted herewith (required only if not transmitted by the International Bureau). has been transmitted by the International Bureau. is not required, as the application was filed in the United States Receiving Office (RO/US). A translation of the International Application into English (35 U.S.C. 371(c)(2)). Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) are transmitted herewith (required only if not transmitted by the International Bureau). have been transmitted by the International Bureau. have not been made; however, the time limit for making such amendments has NOT expired. have not been made and will not be made. A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). Items 11. to 16. below concern document(s) or information included: An Information Disclosure Statement under 37 CFR 1.97 and 1.98. An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. A FIRST preliminary amendment. A SECOND or SUBSEQUENT preliminary amendment. A substitute specification. A change of power of attorney and/or address letter. Other items or information:

534 Rec'd SOT/PTO 09/623283 INTERNATIONAL APPLICATION NO PCT/US99/04752 010310-00272-4 CALCULATIONS PTO USE ONLY 17. X The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$970.00 and International Search Report not prepared by the EPO or JPO International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$840.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO International preliminary examination fee paid to USPTO (37 CFR 1.482) International preliminary examination fee paid to USPTO (37 CFR 1.482) ENTER APPROPRIATE BASIC FEE AMOUNT = \$ 670 T 30 Surcharge of \$130,00 for furnishing the oath or declaration later than \$ 130 months from the earliest claimed priority date (37 CFR 1.492(e)). RATE CLAIMS NUMBER FILED NUMBER EXTRA X \$18.00 Total claims 0 s - 20 = X \$78.00 S Independent claims -3 = + \$260.00 S MULTIPLE DEPENDENT CLAIM(S) (if applicable) s 800 TOTAL OF ABOVE CALCULATIONS Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement \$ 400 must also by filed (Note 37 CFR 1.9, 1.27, 1.28). \$ 400 SUBTOTAL Processing fee of \$130.00 for furnishing the English translation later than 20 30 s months from the earliest claimed priority date (37 CFR 1.492(f)). TOTAL NATIONAL FEE \$ 400 Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be \$ accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property \$ 400 TOTAL FEES ENCLOSED Amount to be refunded: S charged: a X A check in the amount of \$ 400.00 to cover the above fees is enclosed. in the amount of \$______ to cover the above fees. Please charge my Deposit Account No. ... A duplicate copy of this sheet is enclosed. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-2556. A duplicate copy of this sheet is enclosed. c. X NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status. SEND ALL CORRESPONDENCE TO. David V. Radack, Esq. Eckert Seamans Cherin & Mellott, LLC David V. Radack 600 Grant Street, 44th Floor Pittsburgh, PA 15219 33,442 REGISTRATION NUMBER

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TOTAL THE NT CLAIMING SMALL ENTITY STATUS

STATEMENT CLAMMING SMALL ENTITY STATUS (37 CFR 1.9(7) & 1.27(c))—SMALL BUSINESS CONCERN PACID M. B. TERMANTI, JOHN A. BOZAK, SOCHYUN RAM Applicable, cricionifiler: BUG CHESTER PUDGE, FET VISSE (VISSE PUDGE) FOR VISSE VISSE PUDGE I MARK OF SMALL BUSINESS CONCERN SOCIETY FOR COLUMN SOCIETY FOR CONCERN SOCIETY FOR COLUMN SOCIETY	der the Paperwork Reduction Act of	pager and benefits and carboard to labband to a compaged of PVK	ornation Unicas	is decing a valo CAMS correct numb
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500 GROUP, INC. (Small Business Concern)

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small collies, (37 CFR 1.27) I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance iee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

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Gary Cerrone

Airway Park, Ellwood City, PA

TITLE OF PERSON IF OTHER THAN OWNER Vice President and General Manager

NAME OF PERSON SIGNING .

ADDRESS OF PERSONS

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IMPROVEMENTS IN HARD-SIDED LUGGAGE

BACKGROUND OF THE INVENTION

The invention concerns improvements in hard-sided luggage.

"Hard-sided luggage" means luggage having an all plastic shell exterior. Typically, hard-sided luggage is made by vacuum forming sheet stock (typically made of ABS plastic) over a desired shape. Another common method of making hard-sided luggage is to use an injection molded process. Both known processes have limitations, the most glaring of which is that a clam-shell type design (either 50/50 or 60/40 split) must be used.

The clam-shell 50/50 or 60/40 case has specific functional limitations. One such limitation is strength. When these cases receive a sharp blow, the forces are typically transferred to the general area where the case splits to open, thus causing inadvertent opening of the case. Also, when packing, the top must be filled to use all of the interior space. Practically, this becomes cumbersome as the filled cover must then be lifted and folded shut with its often heavy contents. Although mechanical straps can be used to retain the load, typically the angle, reach and loaded weight make this a cumbersome arrangement. Finally, the clam-shell 50/50 or 60/40 case have a less aesthetically pleasing appearance.

Current "soft-sided" or "gussetted" luggage has the advantage of providing a fabric cover top or an 85/15 gusset, when the top or lid is approximately 15% of the depth of the total container. This type of split is becoming more and more desired by consumers, however, until the invention disclosed herein was not available in hard-sided cases.

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What is needed is a hard-sided case which is made by a different process that can produce such a hard-sided case that will overcome the disadvantages of current hard-sided cases.

SUMMARY OF THE INVENTION

The invention has met or exceeded the above-mentioned needs, as well as others. The invention involves using a blow molding process to produce a base and a lid for a hard-sided luggage article. The invention further provides a unique lid structure having a double wall and a base including a Z-beam perimeter. A co-extrusion is provided on the Z-beam, part of the co-extrusion providing a color break when the lid is closed on the base. The other portion of the co-extrusion provides a clip to the Z-beam and ultimately provides the surface for the interlock between the lid and base.

The blow molding process makes it possible to produce a hard-sided luggage article with a trap-door lid. In this way, the parting line between the lid and the base does not extend around the entire sidewall of the case, thus providing a portion of the sidewall which can rest on the floor without the possibility of allowing leakage from a puddle, or the like, to infiltrate into the interior of the case.

BRIEF DESCRIPTION OF THE DRAWINGS

A full understanding of the invention can be gained from the following detailed description of the invention when read in conjunction with the accompanying drawings in which:

Figure 1 is a perspective view of the hard-sided luggage article of the invention.

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Figure 2 is a right side elevational view of the luggage article shown in Figure 1.

 $\label{figure 3} \mbox{ is a left side elevational view of the } \\ \mbox{luggage article shown in Figure 1.}$

Figure 4 is a top plan view of the luggage article shown in Figure 1.

Figure 5 is a bottom plan view of the luggage article shown in Figure 1.

Figure 6 is a front elevational view of the luggage article shown in Figure 1.

Figure 7 is a back elevational view of the luggage article shown in Figure 1.

Figure 8 is a perspective view of the luggage article of Figure 1 showing the lid being opened.

Figure 9 is a cross-sectional view of the lid of the invention.

Figure 10 is a cross-sectional view showing mating of the lid and base and also showing the Z-beam and co-extrusion.

DETAILED DESCRIPTION

Referring now to Figures 1-8, the luggage article 20 of the invention will be described. The luggage article 20 is preferably made by (but not limited to) a blow molding process wherein an extruded hot plastic (typically high density polyethylene (HDPE)) is blown into a cavity mold to create the luggage article 20. This process enables the shapes and designs of the luggage article 20 of the invention to be produced, as opposed to injection molding or vacuum forming which have the limitations discussed above. As can be seen in the figures, blow molding can produce a luggage article 20 having generously curvatured sides, such sides acting as bumpers to deflect and distribute forces and the impact load.

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Referring back to Figures 1-8, it can be seen that the luggage article 20 is formed with an 85/15 split, having a shallow lid. This is a unique and novel geometry with relation to a hard-sided luggage article which overcomes the above-mentioned disadvantages of typical "clam-shell" prior art hard-sided luggage pieces. As can best be seen in Figure 8. a generous storage compartment 22 is provided within which to place the contents (not shown) desired to be packed. The lid 24 is hingedly secured to the base 26 by means of a hinge 28, creating a "trap-door" like arrangement which maximizes the storage compartment 22 volume while providing other benefits, as will be discussed below.

The lid 24 can be secured to the base 26, when the luggage article 20 is closed, by providing a series of latches or locks, such as latches 30, 32, 34. One or more of these latches can contain a tumbler combination lock for further security. Handles 36, 38 are provided to facilitate carrying the luggage article 20. In addition, the hard-sided luggage article 20 preferably includes two wheels 40, 42 and a conventional integral handle means 50 to allow the luggage article 20 to be wheeled along the ground. These mechanisms are well known in the art.

One aspect of the invention involves the placement of the parting line 60 of the luggage article 20. By "parting line" it is meant the area where the base 24 and lid 26 meet when closed. It is noted that the parting line 60 is generally positioned on the front sidewall 62, left sidewall 64 and right sidewall 66 of the luggage article 20. As can be seen best in Figures 2 and 3, the parting line 60 curves upwardly along the left sidewall 64 and right sidewall 66 and is then disposed generally in the same plane as is the lid 24. Referring to Figure 5, it is appreciated that the parting line 60

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is not generally disposed in the bottom sidewall 68. This will create a novel bottom pan 70 (see Figure 8). In this way, there is no parting line on the bottom sidewall 68, which is the sidewall on which the luggage article 20 typically will rest. This is advantageous because in prior art clam-shell designs, the parting line typically is disposed on the bottom sidewall, and because of this, if the luggage article 20 was sat in a puddle or a wet spot, the water in the puddle or wet spot could infiltrate the parting line and make the clothes or other contents of the prior art luggage articles wet. In the novel design of the luggage article 20, the parting line 60 is not disposed on the bottom sidewall 68, thus minimizing the possibility of wet contents if the luggage article 20 is placed in a puddle or the like.

Referring to Figure 9, another aspect of the invention will be discussed. Due to the blow molding process, the lid 24 can be made with a double wall, consisting of an outside wall 80 and an inside wall 82. This design will impart strength to the lid 24 by intermittent "kiss-points" 83, 84, 85, 86 providing and 87. These kiss-points contact the inner surface 80a of the outer wall 80. The double wall configuration also allows a liner or other hardware (not shown) to be attached to the inside wall 82 without the fasteners or rivets protruding from the outside wall 80. In addition, the lid 24 perimeter is formed with a groove 88 in order to mate with the Z-beam and co-extrusion on the base 24. which will be discussed below.

Referring now to Figure 10, several important aspects of the invention will be discussed. The base 24 is formed also by a blow molding process and because of this, a unique Z-beam 100 is formed integral to the base. The Z-beam 100 consists of a portion of the sidewall 101 and includes a horizontal portion 102 and a vertical

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portion 104 extending generally perpendicularly from the horizontal portion 102. The sidewall 101 and horizontal portion 102 form an undercut area 106 which advantageously can ease packing requirements. This is because the contents of the storage compartment 22, such as clothes, can be reasonably tucked under the horizontal portion 102, thus the clothes will not rise above the top line of the base 24, thus making closing of the lid 26 easier. The Z-beam 100 also imparts outstanding lateral rigidity to the base 24 without the need to resort to additional componentry to realize a mechanical advantage.

Figure 10 also shows the co-extrusion clip 120 of the invention. The clip 120 consists of an n-shaped clip portion 122 and a soft horizontal portion 124. clip 120 is designed to be secured to the vertical portion 104 of the base all around the perimeter thereof, as can be seen in Figure 8. If desired, a break 130 in the clip 120 can be made in order to facilitate placement vertical clip 120 onto the portion 104. Preferably, the clip portion 122 is made of a hard plastic material, which nonetheless is constructed and arranged to clip securely onto the vertical portion 104. The soft horizontal portion 124 is made of a softer plastic portion. In addition, the soft horizontal portion 124 can be made of a different color than the base 24 and the lid 26, so that when the luggage article 20 is closed, a color break is created between the lid 26 and the base 24. It will also be appreciated that the lid 26 and base 24 can also be different colors themselves. The key thing to note is that the color of the soft horizontal portion 24 creates a color break no matter what the color or colors of the base 24 and 1id 26. The soft portion 124 also is capable of more readily conforming to the bends of the luggage article opening.

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Although the clip 120 is shown preferably as a co-extrusion, it will be appreciated that the invention is not limited thereto, and that the clip can be a single extrusion or a part molded by any other type of process.

It will be appreciated that an improved hard-sided luggage article has been disclosed.

While specific embodiments of the invention have been disclosed, it will be appreciated by those skilled in the art that various modifications and alterations to those details could be developed in light of the overall teachings of the disclosure. Accordingly, the particular arrangements disclosed are meant to be illustrative only and not limiting as to the scope of the invention which is to be given the full breadth of the appended claims and any and all equivalents thereof.

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WHAT IS CLAIMED IS:

- A method of making a hard-sided luggage article, said method comprising using a blow molding process to produce a base and a lid for said luggage article.
- The method of Claim 1, including said lid having a double wall construction including an outer wall and an inner wall.
- The method of Claim 2, including
 forming said inner wall with intermittent
 portions which contact an inner surface of said outer wall
 in order to impart torsional and compressive strength to
 said lid.
- 4. The method of Claim 3, including
 said base is formed with a Z-beam to
 15 receive said lid thereon;
 said inner wall includes a groove section

said inner wall includes a groove section which mates with said Z-beam when said lid is received on said base; and

an extrusion attached to a section of said

20 Z-beam.

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- 5. The method of Claim 4, including said extrusion is a co-extrusion having a first portion which clips on to said section of said Z-beam and a second portion which extends laterally outwardly from said first portion.
- 6. The method of Claim 5, including said first portion is made from a first material and said second portion is made from a second material, said first material being harder than said second material.

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a Z-beam.

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- 7. The method of Claim 6, including said base and lid have a first color and said second material has a second color, whereby said second portion creates a color break between said base and said lid.
 - A hard-sided luggage article comprising:
 a base;
 a lid secured to said base; and
 said base including an opening defined by
- 9. The method of Claim 8, including $\qquad \text{an extrusion attached to a section of said}$ Z-beam. .
- 10. The method of Claim 9, including said extrusion is a co-extrusion having a first portion which clips on to said section of said Z-beam and a second portion which extends laterally outwardly from said first portion.
- 11. The method of Claim 10, including
 20 said first portion is made from a first
 material and said second portion is made from a second
 material, said first material being harder than said
 second material.
- 12. The method of Claim 11, including
 25 said base and lid have a first color and
 said second material has a second color, whereby said
 second portion creates a color break between said base and
 said lid.
- 13. The method of Claim 8, including 30 said lid has a double wall construction including an outer wall and an inner wall.

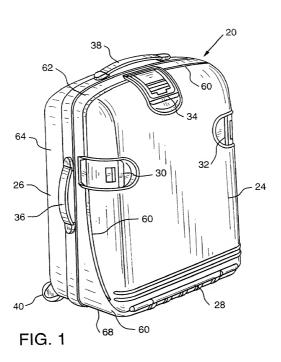
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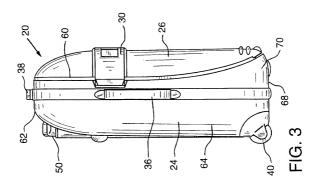
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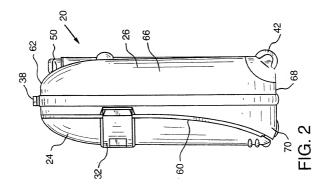
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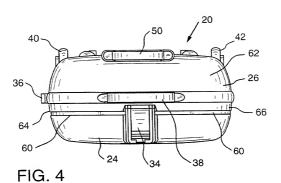
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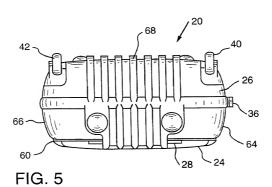
- 14. The method of Claim 13, including
 said inner wall has intermittent portions
 which contact an inner surface of said outer wall in order
 to impart torsional and compressive strength to said lid.
- 15. The method of Claim 14, including said inner wall includes a groove section which mates with said Z-beam when said lid is closed on to said base.
- 16. A hard-sided luggage article including a 10 trap-door lid.
 - 17. The method of Claim 16, including said luggage article including a base, said trap-door lid being hingedly connected to said base.
 - 18. The method of Claim 17, including said lid and said base are separated by a parting line.
 - 19. The method of Claim 18, including said base includes a bottom portion and a sidewall portion; and
 - said parting line having a portion that is not disposed on said sidewall portion.
- 20. The method of Claim 19, including said portion of said parting line not disposed on said sidewall portion is where said lid is hingedly connected to said base.

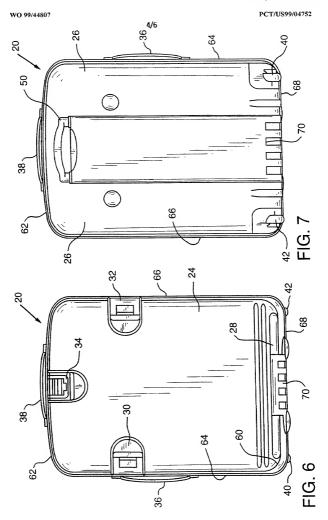


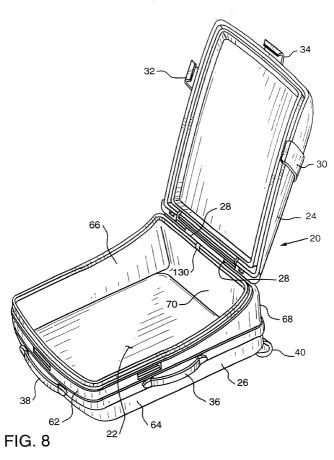


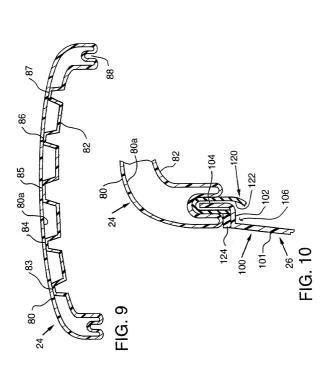












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DECLARATION FOR UTILITY OR DESIGN

PATENT APPLICATION

(37 CFR 1.63)

Attorney Docket Number 010310-00272-4 Paolo M.B. Tiramani First Named Inventor COMPLETE IF KNOWN 09/623,283 Application Number

■ Declaration ☑ Declaration OR Submitted Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) with Initial Filing required)

August 31, 2000 Filing Date Group Art Unit Examiner Name

As a below named inventor, I hereby declare that:												
My residence, post office address, and citizenship are as stated below next to my name.												
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: IMPROVEMENTS IN HARD-SIDED LUGGAGE												
the specification of which (Title of the Invention) is attached hereto OR was filled on (MMIDDYYYY) 08/31/2000 as United States Application Number or PCT International Annication Number (D0/23/282) and was amended on (MMIDDYYYY) (if applicable).												
I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as												
amended by any amendme	ent specifically referred to abo	ove.										
I acknowledge the duty to d	disclose information which is	material to patentability as	defined in 37 CF	K 1.56.								
I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(e) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.												
Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Co	py Attached? NO							
Additional foreign applica	ation numbers are listed on a	supplemental priority data	sheet PTO/SB/0	02B attached her	eto:							
I hereby claim the benefit i	under 35 U.S.C. 119(e) of an											
Application Number	r(s) Filing Date	e (MM/DD/YYYY)										
60/076,705 03/04/1998 Additional provisional application on unmers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.												
		Page 1 of 21										

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ADDITIONAL INVENTOR(S) Supplemental Sheet

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Name of Additional Joint Inventor, if any:											
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Given Nar	me (first and middle [if any])					Family Nan	ne or Su	ırname			
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